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A FIFTH-GRADE SCHOOLROOM.

THE chief problem of education lies in the difficulty of establishing vital connections between the needs of the immature pupil, on the one hand, and the culture and material achievements of the race, on the other. This demands a selection and adaptation of this material to the needs and purposes of development, and in this way involves the element of idealized make-believe. School work never can consist to any considerable extent of the actual work of the world. The past must be presented as a drama, idealized in thought, pictured by the imagination, and acted out in the motor activity of school exercises.

Our aim is to convert the school exercises into organized play—as earnest as any work, as true as any story, and as educative as any experience. Instead of the factory system of forty or fifty little workers turning out their machine product under uniform specifications, sitting in straight rows at screwed-down desks, the pupils are now grouped about round tables and are led to be mutually helpful, as, indeed, the nature of play requires. The main activity in the schoolroom should be learning, not teaching. The teacher has no platform, nor table, nor chair; he never lectures, nor has he time to sit at a table. The opportunity for work is given, the motive for self-activity is roused, and in most cases there is no need then of compulsory tasks. But those that *will* not, when they *may*, *must*.

The literary society meets on Friday afternoons. The responsibility for the performances rests with the children themselves. The teacher is a friend to appeal to for help, but the majority rules and not the autocrat. Recitations, dialogues, readings, essays, riddles, jokes, magic, vocal and instrumental music, and a debate, with sometimes a periodical and roll-call with sentiments or quotations, make up the weekly program. Very usually there is parliamentary business of some kind. If a member fails to perform, the president asks him to state his excuse. Usually a motion to excuse follows, which is then dis-

cussed. The chairman of the program committee is usually involved, as it is his duty to arrange the program two weeks in advance. When the discussion is ended, the motion is put to a vote. If the excuse is not accepted, the non-performing member must give a recitation before the school on the following Wednesday morning. The work done for the society is far superior in educative value to any lessons planned and assigned by a teacher for class exercises in English. One of its most important uses is its training of its members to govern themselves and to obey majority rule.

The Chautauqua Junior Naturalist Club meets once a week or oftener for discussions, reading of a paper, or the presentation of some scientific fact. The children subscribe for *Pets and Animals*, Springfield, O. Seven other papers are kept on file in the room: *Puck*, *The Youth's Companion*, *Boys and Girls* (The Stevens Publishing Co., Ithaca, N. Y.), *The Bubble* (published for boys by one Karl Keffer, Jr., Charleroi, Pa.), *Nature Study* (Manchester, N. H.), and *The Little Chronicle*.

We keep a daily weather record on the blank shown on the following page. The daily weather maps of the Weather Bureau come to us. The course of the "highs" and "lows" across the country is traced, and the climatic conditions of the entire United States are studied. The blank maps of the bureau are used for summaries and exercises. The weather work not only involves meteorology, but most helpfully drills the geography of the United States, teaches considerable astronomy, and organizes some of the arithmetic work.


For the geography we have a relief model of the northern hemisphere, fifty inches in diameter; chart maps (scale ten miles to an inch) of most of the states separately cut out on the boundary lines; four outline blackboard maps with physical features painted in oil; and several dissected maps of the United States. This material is all home-made, and is more useful and better adapted to our needs because it is so. We are finding great help at present from a miniature river¹ that is eroding its bed

¹ The idea of this working model with a flowing river is due to Professor H. J. Banker, of our biological department.

through six feet of rock, sand, clay, soil, and slate, from a lake where it rises in the mountains down over cascades and windings to the coastal plain and delta at the seashore.

The physical features of this "Land of Lilliput" are named,

Weather Record of _____

WEEK NUMBER.....	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Summary
DATE								
SUNRISE								
LENGTH OF FORENOON								
SUNSET								
LENGTH OF AFTERNOON								
DAY'S LENGTH								
MOON AND STARS								
	a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.	
PRECIPITATION								
SKY								CLEAR TIMES 
CLOUDS								CIRRUS CUMULUS STRATUS NONE
BAROMETER 29 in.								H ON
								L ON
WIND								PREVAILING WIND
								90° HIGHEST
								80°
								70°
								60°
								50°
								40°
								30°
								20°
								10°
								0°
								LOWEST
								STORM CENTER PASSED US ON
THERMOMETER								
INDICATIONS								
WEATHER MAP	HIGH							
	LOW							
DIFFERENCE FROM NORMAL								

and maps showing the changes in flood and draught are drawn. The Shewassee River rises in Lake Nokomis, whose source is the Sand Spring in the side of Hiawatha Mountain. The chain of the Ring Mountains surrounds Lake Nokomis. A few decimeters from the lake the Shewassee plunges over Minnehaha Falls into

the pool below, and then begins its course of washing down its valley. At flood time the river fills its valley from hillside to hillside, but in the drier time, when Minnehaha Falls only sparkle their beaded streamlets, the Shewassee is a modest little stream cutting down its flood plain in a single narrow bed. Several islands have formed. The largest of these is Mackinac Island, due to the "Big Head," an enormous human head of stone (clay) that has collected enough gravel and bowlders beside it to divert the Yazoo branch that formerly flowed here all the year round. Now it overflows only at the spring freshets. Under the cliff lower down the Shewassee has washed out Fingal's Cave. The upper part of this formation is hard, with an understratum of soft, sandy earth which easily washes out, leaving caves for a while, until too much of the foundation is washed out, when the roof falls and the cave is no more. The delta formation shows all the characteristics of the Mississippi delta pushing out into the Gulf of Mexico. It has three main branches, in each of which the stream washes out its channel, except at high flood, when everything is covered with water at the delta and the soft alluvial deposit is rapidly carried away. There are several mud volcanoes over in the Bad Lands, northeast of the Shewassee, and from the top of Devil's Leap a perpendicular descent of two decimeters shows the flat wall of rock down which the Fiend jumped.

The soil and rock are prepared in strata and faults, outcrops and tiltings, so that the little Shewassee may find its life-history as similar as possible to that of its giant brothers of the earth. The great advantage over the sand model is that here the river makes its own bed, it is active and moving, changing and "going on forever." It has the fresh interest of a living animal. Its eddies are like thoughts that indicate a changing purpose; it seems pulsating with life, murmuring and babbling over its gravelly bed.

I have often thought I should like to see the ceiling of a schoolroom covered with a converse of a map centering about the home and giving distance and direction from the home town. There would be circles drawn at scale intervals to indicate dis-

tance to the eye, and the names of towns, lakes, mountains, etc., would be painted as on a map; but we should be looking at it from below, and thus should get its converse. It would be as if we were looking from the inside of a transparent globe at the surface features. It would help immensely in training the pupils to think of the real world under their feet, instead of referring every place to a map or model.

The architectural ornamentation of our houses is for the most part absolutely meaningless. Designs for wall paper or frescoes are fit only for geometric paranoiacs. Why not surround our children with symbolic meaning? Put mottoes and proverbs on the walls, with symbolic and typical scenes from the history of civilization. Below these should come a chronological chart of history by years, and with dramatic episodes and pregnant events pictured in striking yet simple form. Every pupil needs to carry such a mental chronology form in mind throughout life.

Would that a writer with the genius of Shakespeare would dramatize the episodes of American history! The children need to have the story acted out, but there must be a poet and artist to recast the story in dramatic form. It cannot be given in its bald actuality as in the text-book. What the play of *Julius Caesar* is to the facts of Roman history in the first century B. C. is just what we need for the facts of our American history now. For the elementary school we need historical plays and dialogues and historical novels more than we do history text-books.

Of all the subjects in the curriculum arithmetic is the most poorly taught. There is scarcely a beginning yet made of anything like an organization of the number work to help build up actually definite images of the world. I doubt whether the reform can ever come without giving up the teaching of arithmetic as a subject for its own sake. In geography we need a great deal of number work, to build out the clear concepts of areas, relative size, population, etc. Everything contained in the Census Reports on manufactures, agriculture, commerce, vital statistics, and population is such needed material. Take the graphic presentation of census facts as given by the charts and maps prepared

under Henry Gannett's direction as a sample of what such arithmetic work would cover.² Scale drawing, measuring, and plotting are among the most natural and proper exercises for children in arithmetic. It is our commercial age that has forced the money problems into the arithmetic. Most of our pupils have no interest in nor relation to the use of money as described in the current arithmetics. Consequently they do not understand the problems nor apply them. The ten volumes of the Census Report for 1900 are the freshest, fullest, and most usable and suggestive material I know of in industrial and commercial geography and arithmetic. To master any of these facts one needs the help of arithmetical processes. It is this help quite as much as any teaching of arithmetic that makes the reform needed.

Our cloak-room we have long ago turned into a work-room, with carpenter's bench, tool chest, nails, screws, etc., for the making of apparatus, charts, models, and other things daily. Here are made models of Columbus's fleet, weaving looms, bird-houses, checkerboards, oil derricks, models of bridges, canal locks, sun-dials, etc.

The periodicity of interest that children show in their games is in striking contrast to our logically framed curriculum, where each subject marches evenly through the year, until dropped in vacation. Do any children play marbles, trundle hoops, or fly kites all the year around? Would not any subject be better taken care of by having it for a season and then turning to something else? If the children were free to choose, I believe they would so arrange it. Just before St. Valentine's Day we have the utmost interest in drawing and painting with plenty of motive. In the fall the children are swinging and turning somersaults on the horizontal bar that is fastened to the door-frame of the workroom. They never look at it in the spring. Hallowe'en is the time for masquerades. So should we have fractions, or Columbus, or Massachusetts, or drawing, or diagramming right on and on while the interest is intense, and then drop it for a time to take up some other branch.

²Cf. HENRY GANNETT, *The Building of a Nation*. New York: The Henry T. Thomas Co., 1895. Also the charts and maps in Census Reports.

The children that need only suggestion and opportunity in order to do their work make rapid progress, are excused from considerable mechanical drill, and thus gain time for much more valuable work that the dullard never can get. Some learn in a single lesson how to divide words into syllables, and need but little drill afterward. Others must be drilled for months on the simplest things. To use these methods of the feeble-minded on ordinary children stunts their growth. Hence it is necessary in every subject to draw off those who need continued drill and work with this smaller number intensively while the bright ones are doing far better at some other, more exacting work. For example, the best ones are started at the use of the dictionary first, and can later assist the duller ones over their difficulties. The brightest pupils do not need to be shown how to find a word, its meaning, its etymology, or its pronunciation; they understand indexes, appendixes, footnotes, tables of contents, etc., intuitively and need only suggestion. "When I have presented one corner of a subject," said Confucius, "and the pupil cannot make out the other three, I do not repeat the lesson." Such pupils go into the drill class for the duller routine of methodized teaching.

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